

# Notice of Allowability

Application No.

10/632,411

Applicant(s)

SUBRAHMANYA,  
PARVATHANATHAN

Examiner

Kiet Doan

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/27/07.
2. ☒ The allowed claim(s) is/are 1,2,6,9,10,15,16,18-21,24,28-30,,35,36,38,50,52,53.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

### DETAILED ACTION

#### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/27/2007 has been entered.

#### EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Ken Vu at (858) 658-5106 on 11/02/2007 and 11/13/2007.

The examiner amendment as follow:

Claims 26, 27, 37 and 51 are cancelled.

Claims now 28 dependent on claim 24.

**Claim 1.** A method of adapting a pilot filter that processes received signals in a wireless communication network, the method comprising:

determining a velocity of a wireless communication device in relation to a wireless network infrastructure;

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estimating a noise power estimate of at least one of the received signals; and  
determining one or more coefficients of the pilot filter based on the determined  
velocity of the wireless communication device and the noise power estimate,

wherein:

the pilot filter receives a plurality of pilot symbols; and

each symbol of the plurality is multiplied by the at least one of the one or more  
coefficients.

**Claim 16.** A communication device comprising:

a pilot filter that receives pilot signal samples over a communication channel; and  
a controller that determines filter coefficients of the pilot filter based on the  
wireless communication device velocity and an estimate of noise power in the  
communication channel, and adapts the pilot filter to the communication channel.

wherein:

the pilot filter receives a plurality of pilot symbols; and

each symbol of the plurality is multiplied by the at least one of the one or more  
coefficients.

**Claim 24.** A communication device comprising:

a plurality of pilot filters each of which is configured to receive a pilot signal and  
to output a filtered pilot signal; wherein the plurality of filters are configured to be  
adapted by changing filter coefficients, and

a controller configured to select one of the plurality of pilot filter outputs based on the wireless communication device velocity and one of the plurality of pilot filters based on an estimate of noise power,

wherein the controller determines filter coefficients for the plurality of pilot filters based on the communication device velocity.

**Claim 35.** A wireless communication system comprising:

at least one mobile wireless communication device with a pilot filter that is configured to accept coefficients that adapt the operation of the filter to a communication channel response;  
and

an infrastructure device configured to communicate with the at least one mobile wireless communication device, wherein the infrastructure device receives signals from the mobile wireless communication device and based on those signals determines pilot filter coefficients and transmits the coefficients to the mobile wireless communication device for use in configuring the pilot filter,

wherein the signals received from the mobile wireless communication device include an estimate of a noise power level in the communication channel.

***Allowable Subject Matter***

3. The following is an examiner's statement of reasons for allowance:

The prior art record, Jin (US 6,658,045 B1) teaches "determining a velocity of a wireless communication device in relation to a wireless network infrastructure;

estimating a noise power estimate of at least one of the received signals”  
(Abstract, C2, L45-67, C3, l1-15 teach communication between base station and mobile units wherein as function of an estimate of the speed of the respective mobile unit).

However, either in Jin reference or in combination are **fails to suggest or fairly teaches** determining one or more coefficients of the pilot filter based on the determined velocity of the wireless communication device and the noise power estimate, wherein: the pilot filter receives a plurality of pilot symbols; and

each symbol of the plurality is multiplied by the at least one of the one or more coefficients as substantially connect and specific detail including all limitations particularly recited in claims 1, 16, 24 and 35.

Claims 2, 6, 9, 10, 15, 18-21, 28-30, 36 and 38 are allow as being dependent on the independent claims 1, 16, 24 and 35.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

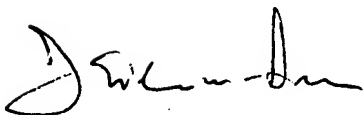
### ***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kiet Doan whose telephone number is 571-272-7863. The examiner can normally be reached on 8am - 5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph H. Feild can be reached on 571-272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Kiet Doan  
Patent Examiner

  
JOSEPH FEILD  
SUPERVISORY PATENT EXAMINER